

THE STATUS OF *QUERCUS ARKANSANA* SARG. (FAGACEAE) IN TEXAS

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ABSTRACT

The status of *Quercus arkansana* Sarg. in Texas is discussed. It is known to occur in Cass County, and there is an historical record for Jasper County.

KEY WORDS: *Quercus arkansana*, Texas, Fagaceae, phytogeography

Quercus arkansana Sarg., an uncommon Coastal Plain oak with scattered populations ranging from southwestern Georgia and northwestern Florida to southwestern Arkansas and northwestern Louisiana, has not been known for Texas (Bill Carr, Texas Natural Heritage Program, pers. comm.; Correll & Johnston 1970; Johnston 1990; Stanley D. Jones, Botanical Research Center (BRCH), pers. comm.; Hunt 1986; Little 1977; Nixon 1985; Sargent 1965; Simpson 1988; Vines 1977). Hunt (1990) lists the species as occurring in Texas on the basis of an historical specimen collected in 1903 in Jasper County (*W.W. Ashe 1* [NCU]). More recently, two small populations of *Q. arkansana* have been found in Cass County.

In 1990, Hunt (*Hunt TX218* [to be distributed to TEX and ND]) first confirmed *Quercus arkansana* from Texas, identifying it as "*Q. arkansana* tending toward *Q. nigra*." This collection, representing one sapling, was from the south side of TX 77, 1 km west of the Louisiana state line in sandy loam pine-oak woods dominated by *Pinus echinata* P. Mill., *Quercus falcata* Michx., *Q. nigra* L., and *Liquidambar styraciflua* L. This find was the result of searches stimulated by the presence of a large population in Louisiana about 3 km away, documented initially by G.H. Ware (*Ware 1492* [DAV]) in 1965 (Hunt 1990).

In 1995, the MacRobertses found several small trees (up to 7 meters high) in a young, densely stocked, even-aged pine plantation on deep sandy soils along a 1 km

stretch of Cass County Road 4561 about 5 km northeast of McLeod, Texas, and 5 km west of Rodessa, Louisiana, which they identified as *Quercus arkansana* (MacRoberts & MacRoberts 2875 [NCSC], 2874, 2877 [BRCH], 2879 [VDB], 2881 [LSUS], 2873 [ND], 2878 [DAV]). Some of these specimens were sent elsewhere for confirmation. Hunt determined 2876 as "probably *Quercus arkansana* × *Q. nigra*;" 2875 and 2873 were identified as *Q. arkansana* by J.W. Hardin and Richard Jensen, respectively. Julia Larke determined an unnumbered specimen to be *Q. arkansana*. This population is within 2 km of a large population of *Q. arkansana* in Louisiana centering on a point where Black Bayou and State Line Creek cross LA 168 about 3 km west of Rodessa (Teague & Wendt 1994). Associated species for this site include *Quercus marilandica* Muenchh., *Q. stellata* Wang., *Q. incana* Bartr., *Pinus taeda* L., *P. echinata*, *Vitis* spp., *Sassafras albidum* (Nutt.) Nees, and *Liquidambar styraciflua*. The area was heavily shaded, had a dense pine litter and almost no herbaceous understory, and was badly damaged by commercial forestry.

The environment of the Cass County sites is typical for the species: midslope of eroding sandhills adjacent to headwater tributaries. That *Quercus arkansana* occurs in Cass County is not surprising since it occurs in adjacent parishes and counties in Louisiana and Arkansas (Hunt 1990; Louisiana Natural Heritage 1995; Smith 1988). Hunt (1986) has documented increased introgression between *Q. arkansana* and *Q. nigra* at the range edge of the former. Thus the mixed traits found in the Cass County collections are expected: short petioles (*Q. nigra*), scurfy leaf and twig pubescence (*Q. arkansana*), and leaf shape varying between the two provide strong evidence for putative hybridization between these species.

In addition to these recent finds, Hunt located a specimen from Jasper County (W.W. Ashe 1 [NCU]) collected in 1903 that is probably *Quercus arkansana* but may be a hybrid between *Q. nigra* and *Q. velutina* Lam. (Hunt 1990). This specimen was originally identified as *Q. velutina* × *Q. laurifolia* Michx. Unfortunately, a specific locality is not given and, although much potential mesic sandhill habitat exists in the northern third of the county, relocating this population, if it still exists, may be difficult. The east Texas landscape has been drastically altered over the past century, and *Q. arkansana* is notorious for its patchy distribution and its inconspicuousness, which has always made it difficult to locate (Hunt 1986).

These populations represent westward range extensions for *Quercus arkansana*. Additional populations of this oak are expected and should be sought in Bowie, Marion, and Cass counties. The rarity of this species in Texas and throughout its range makes it a good candidate for any protected plant list for the state, and an effort to protect its habitat should be made to ensure its survival in Texas.

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